What makes teaching physics effective for life science students?

Ben Geller and Catherine Crouch
in collaboration with:

• Curriculum developers and PER researchers at Maryland, Minnesota, and elsewhere
• Biology and Chemistry faculty
• Ann Renninger (Education)
Calls for Reform: IPLS

2003

2009

2011

2013
Physics 3L/4L at Swarthmore

- Catherine and I have collected data on several iterations of 4L (including student interviews done by a collaborator at UMD).

- 3L went live this semester for the first time – and we have been collecting data (surveys and interviews)
Research questions

- How do life science examples aid students in learning physics?

- What role does interest and affect play in interdisciplinary learning?

- Do students use physics in their upper division bio and chem coursework and in their research?

- How do life science students view modeling and simplification?
Methodology

- The best PER research combines **quantitative** (statistical) analysis of pre/post survey questions with more **qualitative** analysis (interviews, ethnographic classroom observation, open-ended survey questions).

- There is an opportunity to gain skills that are relevant to both teaching and research.
Do students find some life science examples more interesting than others?

Without biochem

With biochem
To learn more ....

If interested, please get in touch with Ben Geller to discuss this further: bgeller1@swarthmore.edu

And, if you ever want to chat about teaching physics or science education more generally, feel free to stop by SC L38!